DOCUMENT RESUME

ED 242 198 FL 014 270

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TITLE Does the Gender Schema Affect Linguistic Judgments?
PUB DATE Apr 83
NOTE 17p.; Paper presented at the Annual Meeting of the Eastern Psychological Association (Philadelphia, PA, April 1983).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS College Students; *Language Processing; *Language Usage; *Personality Traits; *Sex Bias; *Sex Differences; Sex Stereotypes
IDENTIFIERS *Bem Sex Role Inventory

ABSTRACT

Gender schema theory predicts that sex-typed people are more likely than non-sex-typed people to invoke gender in processing information. This was tested in a covert semantic classification task in which male and female college students selected "and" or "but" to conjoin pairs of personality traits from the Bem Sex Role Inventory (BSRI). Use of "and" indicates the traits are considered to be congruent, and use of "but" indicates they are seen as incongruent. Sex-typed and non-sex-typed subjects, as determined by administration of the BSRI, equally conjoined gender-congruent traits with "and" and non-gender-congruent traits with "but," with results predicted by the degree to which the traits were stereotyped as masculine. Subjects also conjoined pairs of traits that were congruent or incongruent with respect to both the gender schema and the self schema. Both gender and self-congruity affected responses and, as predicted by gender schema theory, sex-typed subjects were more likely than non-sex-typed to select "and" for gender-congruent and "but" for non-gender-congruent pairs. However, the largest effect for all subjects was that of gender congruity. (Author/MSE)

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Does the gender schema affect linguistic judgments?

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Paper presented at the annual meeting of the Eastern Psychological Association, Philadelphia, April, 1983

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Abstract

Gender schema theory predicts that sex-typed people are more likely than non-sex-typed people to invoke gender in processing information. This was tested in a covert semantic classification task. Subjects selected AND or BUT to conjoin pairs of personality traits from the Bem Sex Role Inventory in a sentence frame, e.g., "Mary is gentle _____ self reliant." Use of AND indicates that two traits are seen as congruent; BUT indicates that the traits are seen as incongruent. Sex-typed and non-sex-typed subjects equally conjoined gender-congruent traits with and and gender-incongruent traits with BUT (Experiment 1). Responding was predicted by the degree to which traits were stereotyped as masculine, not by evaluation, potency, activity, or stereotypical femininity. In Experiment 2 subjects conjoined pairs of traits that were congruent or incongruent both with respect to the gender schema and the self schema. Both gender and self congruity affected responding and, as predicted by gender schema theory, sex-typed were more likely than non-sex-typed subjects to select AND for gender congruent and BUT for gender incongruent pairs. The largest effect for all subjects, however, was that of gender congruity.

Does the gender schema affect linguistic judgments?

Do sex-typed and non-sextyped people talk differently? Gender schema theory, proposed by Bem (1981) suggests that they should. According to gender schema theory knowledge about gender is represented in memory by a schema, which represents facts about males and females and their behavior, and also provides a memory structure which can be used to organize a wide variety of information. According to gender schema theory sex-typed people are more likely than non-sex-typed people to invoke the gender schema. For example, Bem reports a recall experiment in which freely recalled lists of words were more clustered by gender for sex-typed than for non-sex typed subjects. We tested the generality of this difference by comparing sex-typed and non-sex-typed subjects in a language performance task.

Subjects were given sentence frames like

(1a) Mary is friendly ___ affectionate.

(1b) Mary is yielding ___ self reliant.

(2a) John is forceful ___ self reliant.

(2b) John is forceful ___ gentle.

and were asked to select AND or BUT to insert in the blank. Concepts that are congruent, that is concepts that would be expected to go together, are conjoined by AND (Osgood & Richards, 1973). For example most people would put AND in (1a) and (2a). Concepts that are incongruent, that is, that would not be expected to go together, are conjoined by BUT. For example, most people would put BUT in (1b) and (2b). This congruity effect is very general. It is triggered by any kind of expectation about

what sorts of things go together, as (3a) and (3b) indicate.

(3a) Hilda went to the store and bought some flour.

(3b) Hilda went to the store but did not get any flour.

The selection of AND indicates that two ideas are seen as going together; BUT indicates that they do not go together. The choice of AND or BUT may thus serve as a covert classification measure, just as in Bem's experiment clustering in free recall served as a covert measure of classification.

The congruity principle just described would lead us to expect that same-sex-stereotype traits would be viewed as congruent and conjoined by AND as in (1a) and (2a), while different-sex-stereotype traits would be viewed as incongruent and conjoined by BUT as in (1b) and (2b). Gender schema theory would lead us to expect, in addition, that this congruity effect would be stronger for sex-typed than for non-sex-typed people. That is, sex-typed would be more likely than non-sex-typed people to conjoin same-sex-stereotype adjectives with AND and different-sex-stereotype adjectives with BUT. We tested this prediction in two experiments In both subjects chose AND or BUT to conjoin pairs of adjectives taken from the Bem Sex Role Inventory.

Experiment 1

Materials. We selected 8 male-stereotype, 8 female-stereotype and 16 neutral adjectives from the Bem scale. The male- and female-stereotype adjectives were paired with other adjectives of the same gender to give 16 same-sex-stereotype pairs like those in (1a) and (2a). The same male- and female-stereotype adjectives were then each paired with an adjective of the other gender to

produce 16 different-sex-stereotype pairs, e.g. (1b) and (2b). The neutral adjectives were also paired to produce another 32 pairs. These 64 pairs were randomly ordered for presentation to the subjects. The pairs were presented in a sentence frame similar to that in examples (1) and (2). For female subjects the sentences were all about Mary. For male subjects the sentences were all about John. The subjects were told to select AND or BUT for each sentence. They were told to imagine that they were talking about a person who was typical of their own gender who was called John or Mary and to select AND or BUT, whichever sounded best.

Subjects. The subjects were fifty females and forty-six males solicited by members of an Experimental Psychology class at Trenton State College from among their acquaintences and relatives. The subjects filled in the Bem Sex Role Inventory (BSRI) and then the and/but questionnaire.

Results

A median split scoring procedure for the BSRI (Spence & Helmreich, 1981) yielded 38 sex-typed, 27 androgynous and 24 undifferentiated subjects. There were only 7 cross-typed subjects and so the data for this group was not analysed. Table 1 shows the mean percentage of AND responses given by the three BSRI-personality types.

The means for the masculine and feminine adjectives are the ones of interest. Congruent pairs are same-sex-stereotype adjectives, female-female and male-male. For these we expected an AND response and you see that the percentage of AND responses was indeed high, about 90%. Incongruent pairs are different-sex

adjectives, female-male and male-female. For these we expected BUT responses and the the percentage of AND responses was much lower, around 40%. This difference was extremely reliable ($F(1,82)=207.12$, $p<.001$). Thus we have good support for the congruity principle. People conjoin ideas that go together with AND; and apparently gender is a good basis for determining what traits go together.

What about gender schema theory? The theory predicts a larger congruity effect for sex-typed than for non-sex-typed subjects. The size of the congruity effect is given in the third column, which gives the difference between the congruent and incongruent sentences. The prediction was not supported. The size of the effect for sex-typed and androgynous subjects was virtually identical. That for undifferentiated subjects was slightly larger but the interaction did not approach significance ($F<1.0$).

How to explain this result? First, perhaps subjects were making their decisions about what traits go together on some basis other than gender. Osgood and Richards (1973) showed, for example, that evaluation, potency and activity, the three dimensions of the semantic differential, are powerful determinants of congruity. This hypothesis was tested by Jeanne Mirabella at Trenton State College. She collected ratings of evaluation, potency and activity and also of masculinity and femininity for each of the traits and looked at how well differences on these dimensions predicted choice of AND and BUT. We evaluated the results using multiple regression. The correlations are given in Table 2 and the multiple regressions are summarized in Table 3. For the masculine/feminine adjectives

the and/but decisions were based primarily on masculinity, with a smaller contribution of evaluation. Curiously femininity had no effect. The results for the neutral items make a nice contrast here. For them masculinity had no effect, as one would expect. Instead the decisions were all based on evaluation. Apparently the subjects were basing their decisions about the masculine/feminine adjectives on gender.

A second possible explanation for the absence of an interaction in Experiment 1 is that grammatical decisions, like the selection of AND or BUT, are not responsive to individual differences in personality. We had assumed that decisions would reflect the subjects' view of their own gender. Perhaps we were wrong about this. Perhaps we need to distinguish between gender as it occurs in the self schema and stereotypes of gender represented by the gender schema (cf Mills & Tyrrell, in press). This possibility was explored by Cindy Jones at West Chester University in a second experiment.

Experiment 2 tested the hypothesis that and/but decisions are affected by society's stereotypes about gender, i.e. by the gender schema, but not by people's views of themselves, i.e. by the self schema. The effect of societal stereotypes on and/but decisions was assessed, as in Experiment 1, by selecting adjectives from the BSRI scale. The BSRI adjectives represent stereotypes of typical masculine and feminine traits. We will now call ythis variable "gender congruity". Same-sex adjectives are gender-congruent; different-sex adjectives are gender-incongruent.

We also looked at the effect of the subjects' view of their

own gender on and/but decisions. From the perspective of the self schema two traits go together if both are characteristic of the self, or if both are uncharacteristic of the self. Two traits do not go together if one is characteristic and the other is not characteristic of the self. Self congruity was manipulated in Experiment 2 by selecting adjectives from the BSRI that the subject had endorsed as self descriptive (self-items) or not self descriptive (non-self items). The adjectives used to construct the and/but sentences were thus selected individually for each subject.

Experiment 2

Materials. Gender congruity and self congruity were varied orthogonally. This was done by selecting from the BSRI completed by each subject, 4 masculine, and 4 feminine adjectives. Two in each set had received high ratings (self items) and two had received low ratings (non-self items). The adjectives were then combined into pairs representing the four conditions that result from the orthogonal manipulation of gender and self congruity to give 28 pairs. In addition, six pairs containing neutral adjectives were included.

The adjective pairs were randomized and presented to subjects embedded in sentences, as in Experiment 1.

Subjects. The subjects were 54 female and 23 male undergraduates of West Chester University.

Results

The results are presented in Table 4. (A median split on the BSRI gave 29 sex-typed, 19 androgynous, 21 cross-typed, and 16 undifferentiated subjects.) The effect of gender congruity can be

seen by comparing the scores in the first and second column of the table. You can see that, as in Experiment 1, there was a strong effect of gender congruity. There were more AND responses to the gender-congruent than to the gender-incongruent pairs. The size of the gender congruity effect for each type of person is given in the third column; the overall effect was 34% and was again highly reliable ($F(1,73)=201.99$, $p<.001$).

There was also a small but reliable effect of self congruity. Look at the results for sex-typed subjects for example. The top row represents the results for self congruent pairs, the second row for self incongruent pairs. You see that more AND responses were made to the self congruent pairs. The same pattern occurs for the other three groups. The overall effect was 8.6% ($F(1,73)=17.20$, $p<.001$).

This time we also found the interaction predicted by gender schema theory. The effect of gender congruity was larger for sex-typed than for non-sex-typed subjects. You can see this in the third column of Table 4 which gives the difference between the gender congruent and the gender incongruent sentences. The effect was larger for sex-typed than for androgynous or undifferentiated subjects, with cross-typed subjects inbetween. (This interaction was significant, ($F(3,73)=2.64$, $p<05$, overall, $F(1,46)=6.17$, $p<.02$, for the comparison of sex-typed and androgynous, $F(1,43)=5.68$, $p<02$, for the comparison of sex-typed and undifferentiated).

Discussion

The interaction supports the prediction of gender schema

theory that sex-typed are more likely than non-sex-typed people to use the gender schema in processing information. The larger effect of gender congruity for sex-typed subjects indicates that they were more likely to select AND for same-sex- and BUT for different-sex-stereotype adjectives. This suggests that sex-typed subjects based more of their decisions on gender than non-sex-typed subjects. This result supports the general claim of gender schema theory that differences between sex-typed and non-sex-typed individuals can be accounted for in terms of differences in the propensity to invoke the gender schema for processing information.

The interaction indicates that grammatical decisions, in this case the choice of AND or BUT, are affected by individual differences in personality. This conclusion is given further support by the effect of self congruity on and/but decisions. This effect indicated that the decisions were not based entirely on societal stereotypes represented by the gender schema but were also influenced by the individual subject's view of their own gender.

How then are we to explain the absence of a difference between sex-typed and non-sex-typed subjects in Experiment 1? The important conclusion to be drawn from the absence of an effect in Experiment 1 is that effects due to individual differences are very weak compared to those due to effect of societal stereotypes. This can be seen in Experiment 2 which was set up to compare the two types of effect. The size of the gender congruity effect due to the gender schema, which represents societal stereotypes about masculinity and femininity was 43%. The size of the self cong-

ruity effect due to the subjects' self schema was 9%, a fourth of the size. And the difference in size of the gender congruity effect for sex-typed and androgynous subjects was a similarly modest 15%. This indicates that and/but decisions are largely determined by societal stereotypes and that individual attributes and personality have only a small effect.

This conclusion has implications for proposals to change grammatical rules to reflect personal attitudes and changing roles in society. We have all been trying for at least the past ten years to relearn the grammatical rules governing the use of the personal pronouns HE and SHE. For many people it is still an uphill battle. Our use of these pronouns is more the result of an editing process than of a change in the automatic rules for lexical selection. Our grammar does not seem to want to follow our personal beliefs. We now think that the reason for this difficulty is not some unconscious reservation about social equality for men and women but is due to the nature of the mechanisms that govern grammatical rules. The rules of language must reflect the attitudes of the language community. If language is to be used effectively to communicate it must reflect shared knowledge. Its basic mechanisms cannot be too sensitive to individual attitudes and attributes. This explanation is suggested by the results of Experiment 2. Grammatical decisons about the use of AND and BUT were controlled much more powerfully by the stereotypes of society than they were by individual differences in personality and in self concept.

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TABLE 1

Percentage of and responses to congruent (cong) and incongruent (incong) masculine/feminine and neutral traits for sex-typed, androgynous, and undifferentiated subjects.

TRAITS	MASCULINE/FEMININE			NEUTRAL		
CONGRUITY	CONG	INCONG	DIFF	CONG	INCONG	DIFF
BSRI-TYPE						
SEX-TYPED	90.7	45.4	45.3	71.1	30.1	41.0
ANDROGYNOUS	87.7	42.1	45.6	75.3	27.1	48.2
UNDIFFERENTIATED	87.7	36.6	51.1	60.5	31.7	28.8

Table 2

Correlations of number of and responses in Experiment 1 with difference of traits in masculinity (Masc), femininity (Fem), evaluation (E) potency (P), and activity (A) for masculine/feminine and neutral items.

	Masculine/feminine items						Neutral Items					
	Ands	Masc	Fem	E	P	A	Ands	Masc	Fem	E	P	A
Ands	1.00						1.00					
Masc	-.47*	1.00					.05	1.00				
Fem	-.18	.52*	1.00				-.13	.40*	1.00			
E	.07	.45*	.59	1.00			-.01	.10	-.09	1.00		
P	-.25	-.03	-.08	-.18	1.00		-.06	.14	.10	.83*	1.00	
A	-.11	.54*	.48*	.37*	.05	1.00	-.17	-.14	.26	.31	.48	1.00

Table 3

Multiple R values for stepwise multiple regression for number of and responses in Experiment 1 predicted by difference scores of traits on Masculinity (Masc), Femininity (Fem), Evaluation (E) Potency (P), and Activity (A), for masculine-feminine and neutral items.

Masculine/feminine pairs		Neutral Pairs	
Source	R Square	Source	R Square
Masc	.605 *	E	.673 *
E	.790 *	F	.710
A	.841	P	.710
P	.841	A	.710
Fem	.841	M	.710

Table 4

Percentage of and responses to masculine/feminine and neutral traits as a function of gender and self congruity (cong and incong) and BSRI-type.

TRAITS		MASCULINE/FEMININE			NEUTRAL
GENDER CONGRUITY		CONG	INCONG	DIFF	
BSRI-TYPE	SELF CONGRUITY				
SEX-TYPED	CONG	86.3	43.1	43.2	31.0
	INCONG	77.6	32.7	44.9	14.3
ANDROGYNOUS	CONG	82.9	50.6	32.3	42.1
	INCONG	72.4	46.0	26.4	21.0
CROSS-TYPED	CONG	86.5	42.3	44.2	30.7
	INCONG	72.1	47.1	25.0	13.5
UNDIFFER-	CONG	82.9	52.4	30.5	35.9
ENTIATED	INCONG	68.7	43.7	25.0	18.7
MEANS		78.7	44.7	34.0	25.9